

03040201-100

(Black Creek/Lake Robinson)

General Description

Watershed 03040201-100 is located in Chesterfield and Darlington Counties and consists primarily of **Black Creek** and its tributaries from its origin to the Lake Robinson Dam. The watershed occupies 109,341 acres of the Sandhills region of South Carolina. The predominant soil types consist of an association of the Alpin-Candor-Troup series. The erodibility of the soil (K) averages 0.10; the slope of the terrain averages 7%, with a range of 2-15%. Land use/land cover in the watershed includes: 68.2% forested land, 18.3% agricultural land, 7.3% scrub/shrub land, 2.6% water, 1.5% urban land, 1.3% barren land, and 0.8% forested wetland.

Black Creek originates near the Town of Pageland and accepts drainage from Old Town Pond, Cattail Branch, Mangum Branch, Boggy Branch, Rocky Branch, Big Branch, Panther Branch, Tan Trough Branch, and Cotton Patch Branch. Big Ruddy Branch enters the system next followed by Silver Run, Little Ruddy Branch, Still Branch, Horsepen Branch, Hurricane Branch, Joplin Branch (Stancil Lakes), Big Branch, and Meadow Branch (Joplin Mill Branch). Further downstream, Rattlesnake Branch (Dismal Spring Branch) flows into Black Creek followed by Jessies Branch, Little Black Creek (Graves Millpond, Peddler Branch, Martin Branch, Woodward Millpond), Canal Branch, and Poplar Branch. Black Creek then accepts drainage from Skipper Creek (Peeled Oak Branch, Dead Pine Branch, Little Skipper Creek), Rogers Branch, Pond Branch, Long Branch (Clay Ford Branch, Mays Lake), Ham Creek (Triple Lakes, Lake Bee, Hemp Branch, Lightwood Log Branch, Poplar Branch, Martin Lake, Cow Branch), and Little Alligator Creek before flowing through Lake Robinson. Little Beaverdam Branch and Lower Alligator Creek flow into the headwaters of the lake, Big Beaverdam Creek flows into the midsection, and Pond Hollow Branch enters the lake near the dam.

The Carolina Sandhills National Wildlife Refuge extends across the center of the watershed, and the Sand Hills State Forest lies between the refuge and the lake. There are numerous lakes and ponds (totaling 2,452.7 acres) in this watershed, and a total of 166.8 stream miles. Black Creek and its tributaries upstream of the S.C. Hwy. 145 crossing (just upstream of Skipper Creek) are classified FW. Downstream of the crossing, Black Creek is classified FW* (Dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5) and its tributaries are classified FW. Lake Robinson is classified FW*.

Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
PD-674	BIO	FW	BLACK CREEK AT SR 683
PD-004	P	FW	BLACK CREEK AT S-13-43 1 MILES NE NICEY GROVE
PD-676	BIO	FW	LITTLE BLACK CREEK AT ZILLYSTEEN ROAD
PD-670	BIO	FW*	BLACK CREEK AT SR 33
PD-613	BIO	FW	SKIPPER CREEK AT SC 145
PD-251	W	FW*	BLACK CREEK AT US 1
PD-327	P	FW*	LAKE ROBINSON AT S-13-346 5 MILES E MCBEE

Black Creek - There are four monitoring sites along this section of Black Creek. At the furthest upstream site (**PD-674**), aquatic life uses are fully supported based on macroinvertebrate community data. At the next site downstream (**PD-004**), aquatic life and recreational uses are fully supported. There is a significant increasing trend in pH. A significant increasing trend in dissolved oxygen concentration and significant decreasing trends in five-day biochemical oxygen demand and total phosphorus concentration suggest improving conditions for these parameters. The pesticide dieldrin was detected in the 1994 sediment sample. Further downstream (**PD-670**), aquatic life uses are fully supported based on macroinvertebrate community data. At the furthest downstream site (**PD-251**), aquatic life and recreational uses are fully supported.

Little Black Creek (PD-676) - Aquatic life uses are fully supported based on macroinvertebrate community data.

Skipper Creek (PD-613) - Aquatic life uses are fully supported based on macroinvertebrate community data.

Lake H. Robinson (PD-327) - Lake Robinson is a 2250-acre impoundment on Black Creek, with a maximum depth of approximately 31 feet (9.4 meters) and an average depth of approximately 14 feet (4.2 meters). Lake Robinson's watershed comprises 173 square miles (448 km²).

Aquatic life uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration. There is also a significant increasing trend in pH. Significant decreasing trends in five-day biochemical oxygen demand and turbidity suggest improving conditions for these parameters. P,P'DDT (a metabolite of DDT) was detected in the 1994 sediment sample. Although the use of DDT was banned in 1973, it is very persistent in the environment. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria concentration.

A fish consumption advisory has been issued by the Department for mercury and includes Lake Robinson within this watershed (see advisory 115).

NPDES Program

Active NPDES Facilities

RECEIVING STREAM FACILITY NAME PERMITTED FLOW @ PIPE (MGD) COMMENT	NPDES# TYPE LIMITATION
BLACK CREEK TOWN OF PAGELAND/WTP PIPE #: 001 FLOW: M/R	SCG645012 MINOR INDUSTRIAL EFFLUENT
LITTLE BLACK CREEK	SCG730045

HEDRICK SAND & GRAVEL CO.
PIPE #: 001 FLOW: M/R

MINOR INDUSTRIAL
EFFLUENT

CATTAIL BRANCH
TOWN OF PAGELAND/SOUTHEAST WWTP
PIPE #: 001 FLOW: 0.6
PIPE #: 001 FLOW: 0.8 (PROPOSED)
WQL FOR DO,TRC,NH3N

SC0021539
MINOR DOMESTIC
WATER QUALITY
WATER QUALITY

LAKE ROBINSON
CAROLINA POWER/HB ROBINSON
PIPE #: 001 FLOW: 855.0
PIPE #: 003 FLOW: 0.0425

SC0002925
MAJOR INDUSTRIAL
EFFLUENT
EFFLUENT

LOWER ALLIGATOR CREEK
A.O. SMITH WATER PRODUCTS CO.
PIPE #: 001 FLOW: 0.003
PIPE #: 002 FLOW: 0.002
PIPE #: 004 FLOW: 0.009

SC0044938
MINOR INDUSTRIAL
EFFLUENT
EFFLUENT
EFFLUENT

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME
FACILITY TYPE

PERMIT #
STATUS

CHESTERFIELD COUNTY LF #2/JEFFERSON
MUNICIPAL

DWP-036
CLOSED

CHESTERFIELD DUMP

CLOSED

CAROLINA POWER & LIGHT C/C LANDFILL
CONSTRUCTION

----- 163001-1601 (CWP-028, CWP-029,
IWP-195, IWP-176)

CAROLINA POWER & LIGHT C/C LANDFILL
CONSTRUCTION

----- 163001-1602

Mining Activities

MINING COMPANY
MINE NAME

PERMIT #
MINERAL

B.V. HEDRICK GRAVEL & SAND CO.
PIEDMONT SAND

0665-25
SAND

METROMONT MATERIALS CORP.
BOVA MINE #2

0757-25
SAND

METROMONT MATERIALS CORP.
PAGELAND SAND PIT #2

0426-25
SAND

PAGELAND SAND CO., INC.
PAGELAND SAND MINE #2

0746-25
SAND

FT. WILLIAMS SAND CO., INC.

0969-25

WILLIAMS SAND

SAND

Water Supply

WATER USER (TYPE)
STREAM

REGULATED CAPACITY (MGD)
PUMPING CAPACITY (MGD)

TOWN OF PAGELAND (M)
OLD TOWN POND

0.80
2.00

Growth Potential

There is a low to moderate potential for growth in this rural watershed, which contains a portion of the Town of Pageland. The Town of McBee is just outside the watershed. A sizeable portion of the watershed is publicly owned lands within the Carolina Sandhills National Wildlife Refuge or the Sand Hills State Forest, limiting development in these areas. S.C. Hwy. 151 is a four-lane highway connecting the Cities of Florence and Charlotte, and together with its bypass around the Town of Pageland should see additional commercial and industrial development in the northern portion of the watershed. The recent announcement by several industries to locate in this northern portion could also increase growth. Water service is limited to Pageland, McBee, and the southern end of the watershed. Sewer service exists only in the Pageland area. The Town of McBee is the other industrial area in the watershed, and has the potential for growth if sewer service is extended from the City of Hartsville.